



(11) **EP 2 154 835 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
17.02.2010 Bulletin 2010/07

(51) Int Cl.:
H04L 12/54 (2006.01) H04L 12/18 (2006.01)

(21) Application number: **08800887.5**

(86) International application number:
PCT/CN2008/072393

(22) Date of filing: **17.09.2008**

(87) International publication number:
WO 2009/039766 (02.04.2009 Gazette 2009/14)

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**
Designated Extension States:
AL BA MK RS

- **WANG, Lei**
Longgang District 518129
Shenzhen
(CN)
- **DONG, Ting**
Longgang District 518129
Shenzhen
(CN)
- **ZHANG, Huiping**
Longgang District 518129
Shenzhen
(CN)
- **YANG, Jian**
Longgang District 518129
Shenzhen
(CN)

(30) Priority: **21.09.2007 CN 200710154667**

(71) Applicant: **Huawei Technologies Co., Ltd.**
Longgang District, Shenzhen
Guangdong 518129 (CN)

(72) Inventors:

- **FAN, Shu'nan**
Longgang district 518129
Shenzhen
(CN)
- **CHEN, Guoqiao**
Longgang District 518129
Shenzhen
(CN)

(74) Representative: **Kreuz, Georg Maria et al**
Huawei Technologies
Riesstrasse 25
80992 München (DE)

(54) **METHOD, DEVICE AND SYSTEM FOR CONTROLLING PUSH MESSAGE**

(57) A method for controlling a push message is provided. The method includes: comparing the push message with a matching condition in a preset push message control policy, and processing the push message accord-

ing to a processing mode corresponding to the matching condition that is satisfied by the push message. Two kinds of push sending agents, two kinds of terminals, and three kinds of systems for controlling a push message are provided.

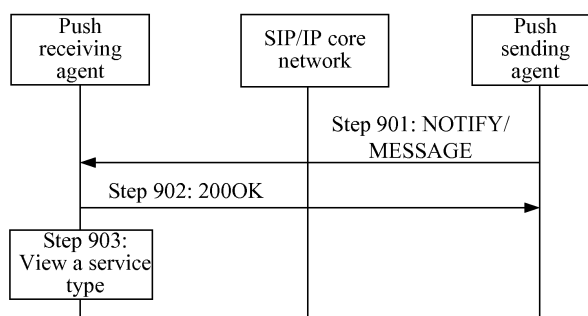


FIG. 9

Description**CROSS-REFERENCE TO RELATED APPLICATION**

5 **[0001]** The application claims the benefit of priority to China Patent Application No. 200710154667.7, filed on September 21, 2007 and entitled "METHOD, DEVICE AND SYSTEM FOR CONTROLLING PUSH MESSAGE", which is incorporated herein by reference in its entirety.

FIELD OF THE TECHNOLOGY

10 **[0002]** The present invention relates to a content distribution technology, and more particularly to a method, a device, and a system for controlling a push message.

BACKGROUND OF THE INVENTION

15 **[0003]** Push is a content distribution mechanism, which employs a client/server operation mode and requires a server to distribute the required content without requiring a client to send a specific request. Push is most frequently used in message notification systems, and is applied in various industries such as security, banking, and business website. Taking the field of mobile value-added services as an example, the push service has the following applications: user customized information, which mainly refers that a user designates a subscription condition through initiative subscription or operation, and a content provider actively sends proper information to the user according to the corresponding subscription condition; group send information, which refers to a content push initiated by a third party without initiative subscription from the user, and may be specifically sending focused advertisements for stores, or sending group information notification according to actual conditions; and point-to-point service, which refers that a certain user sends designated content to another user.

20 **[0004]** A structure for realizing a push application is mainly formed by the following three parts: a push proxy gateway (PPG), a push initiator (PI), and a terminal. The PI is an initiator of a push message, which is an application running on an ordinary website server and communicates with the PPG through a push access protocol (PAP). The PPG mainly functions to process a push submission and operations associated with the submission and transfers a push content to the terminal. Services of the PPG include: identification and authentication of the PI, access control, resolution and error detection of the push content and control information, address resolution of an acceptor of the push content, including broadcast, multicast, and other functions, and communication with the terminal through a push Over The Air (OTA) protocol.

25 **[0005]** Briefly, the push realizing process is described as follows. The PI initiates a push message, which indicates a receiving terminal, the source PI, and a push content of the push message. The PI sends the push message to the PPG through the PAP. Then, the PPG sends the push message to the terminal through the push OTA protocol. FIG. 1 is a schematic view of realizing a push application in the prior art.

30 **[0006]** A session initiation protocol (SIP) is a control (signaling) protocol in an application layer, which is adapted to establish, modify, and terminate a call between Internet Protocol (IP) network-based users. The actual applications of the SIP in practice include, but not limited to, speech, video, instant message, and the like. An SIP push service is a service for encapsulating a push content in an SIP message and transferring the SIP message over an existing SIP/IP core network. FIG. 2 is a schematic view of realizing an SIP push service in the prior art. As shown in FIG. 2, the part accomplishing the functions of the PPG in the push service may be referred to as a push sending agent, while the part accomplishing the functions of the terminal in the push service may be referred to as a push receiving agent. The push sending agent and the push receiving agent are interface points of the SIP/IP core network and communicate with each other by using an SIP message. In the SIP push service, the functions provided by the SIP include: accessibility of a user, availability of the user, capability of the user, and session establishment and session management. The SIP/IP core network provides abundant end-to-end media sessions and sessions between a client and a server. The SIP/IP core network includes an SIP gateway and a registration server, and provides authentication and authorization access services for SIP clients and SIP services, and may also provide SIP registration and routing functions.

35 **[0007]** FIG. 3 is a schematic structural view of a framework of the SIP push service in the prior art. A terminal includes a push receiving agent and an application module. The push receiving agent transmits a push content to the application module. The application module accomplishes the corresponding service operation based on the push content. A server includes a push sending agent and an application module. The push sending agent receives a transfer command and the push content sent by a push provider PI, and sends the push content to the push receiving agent in the terminal over the SIP/IP core network according to the transfer command. The application module in the server accomplishes the functions associated with the service in the application layer.

40 **[0008]** Currently, in the SIP push service, the user can only report his/her own terminal capability information and

preference through a user agent profile (UA Prof) mechanism. The terminal capability may refer to, for example, equipment manufacturer, model, software version, screen size, screen resolution, and the like, while the preference may refer to some user-defined configuration information. The information reported by the user may be employed by the server in realizing service customization and personalization. That is, the user informs the server of services supported by him/her.

The message security and authorization in the SIP push service are mainly based on a security mechanism provided by the SIP/IP core network. That is, the SIP/IP core network can perform authentication and security appraisal on the push sending agent, so as to ensure that the push sending agent corresponding to the terminal is legal, but has no control capability on the push message, for example, in the case that the user does not wish to receive a large push content, the user intends to reject some undesirable service types and a push content containing reactionary words and violent words, the user intends to reject a push content sent by a PI that is un-trusted to the terminal, or the terminal is only expected to receive a specific push content. Since no control capability on the push message is provided, the push message cannot be sent in the above specific cases, so that the user experience is degraded.

SUMMARY OF THE INVENTION

[0009] Accordingly, the embodiments of the present invention provide a method for controlling a push message to realize control of the push message, so as to enhance the user experience.

[0010] The present invention is directed to a push sending agent, the use of which can realize control of a push message, so as to enhance the user experience.

[0011] The present invention is directed to another push sending agent, the use of which can realize control of a push message, so as to enhance the user experience.

[0012] The present invention is directed to a terminal, the use of which can realize control of a push message, so as to enhance the user experience.

[0013] The present invention is directed to another terminal, the use of which can realize control of a push message, so as to enhance the user experience.

[0014] The present invention is directed to a system for controlling a push message, which can realize control of the push message, so as to enhance the user experience.

[0015] The present invention is directed to another system for controlling a push message, which can realize control of the push message, so as to enhance the user experience.

[0016] The present invention is directed to still another system for controlling a push message, which can realize control of the push message, so as to enhance the user experience.

[0017] As a first aspect the present invention provides a method for controlling a push message, which sets a push message control policy containing a matching condition and a corresponding processing mode. The method further includes the following steps:

the push message is compared with the matching condition in the push message control policy, and the push message is processed according to the processing mode corresponding to the matching condition that is satisfied by the push message.

[0018] As a second aspect the present invention provides a push message sending agent, which includes a push message processing module and a policy storage module;

the push message processing module is adapted to receive a push message sent by a PI, compare the received push message with a matching condition in a push message control policy stored by the policy storage module, and process the received push message according to a processing mode corresponding to the matching condition that is satisfied by the push message;

the policy storage module is adapted to store the push message control policy containing the matching condition and the corresponding processing mode that is set by a terminal.

[0019] As a third aspect the present invention provides another push message sending agent, which includes a push message processing module and a policy reading module;

the push message processing module is adapted to receive a push message sent by a PI, compare the received push message with a matching condition in a push message control policy read by the policy reading module, and process the received push message according to a processing mode corresponding to the matching condition that is satisfied by the push message;

the policy reading module is adapted to read the push message control policy containing the matching condition and the corresponding processing mode from a terminal.

[0020] As a fourth aspect the present invention provides a terminal, which includes a policy setting module, a policy storage module, and a push message processing module;

the policy setting module is adapted to set a push message control policy containing a matching condition and a corre-

sponding processing mode;

the policy storage module is adapted to store the push message control policy set by the policy setting module;

the push message processing module is adapted to receive a push message sent by a push sending agent, compare the received push message with the matching condition in the push message control policy stored by the policy storage module, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the received push message.

[0021] As a fifth aspect the present invention provides another terminal, which includes a policy setting module and a policy sending module;

the policy setting module is adapted to set a push message control policy containing a matching condition and a corresponding processing mode;

the policy sending module is adapted to send the push message control policy set by the policy setting module to a push sending agent.

[0022] As a sixth aspect the present invention provides a system for controlling a push message, which includes a push sending agent and a terminal;

the push sending agent is adapted to store a push message control policy containing a matching condition and a corresponding processing mode that is set by the terminal, receive the push message sent by a PI, compare the received push message with the matching condition in the stored push message control policy, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the push message; the terminal is adapted to set the push message control policy containing the matching condition and the corresponding processing mode and send the push message control policy to the push sending agent.

[0023] As a seventh aspect the present invention provides another system for controlling a push message, which includes a push sending agent and a terminal;

the terminal is adapted to set and store a push message control policy containing a matching condition and a corresponding processing mode, receive the push message sent by the push sending agent, compare the received push message with the matching condition in the stored push message control policy, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the received push message; the push sending agent is adapted to send the push message to the terminal.

[0024] As an eighth aspect the present invention provides still another system for controlling a push message, which includes a push sending agent and a terminal;

the terminal is adapted to set a push message control policy containing a matching condition and a corresponding processing mode;

the push sending agent is adapted to read the push message control policy containing the matching condition and the corresponding processing mode from the terminal, receive the push message sent by a PI, compare the received push message with the matching condition in the read push message control policy, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the push message.

[0025] Based on the above, in the method, the device, and the system for controlling a push message provided in the embodiments of the present invention, a push message control policy containing a matching condition and a corresponding processing mode is set, and when a received push message satisfies the matching condition in the push message control policy, the received push message is processed according to the processing mode corresponding to the matching condition, thereby realizing control of the push message, so as to enhance the user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026]

FIG. 1 is a schematic structural view of realizing a push mechanism in the prior art;

FIG. 2 is a schematic view of realizing an SIP push service in the prior art;

FIG. 3 is a schematic structural view of a framework of the SIP push service in the prior art;

FIG. 4 is a schematic structural view of a first push sending agent according to an embodiment of the present invention;

FIG. 5 is a schematic structural view of a second push sending agent according to an embodiment of the present invention;

FIG. 6 is a schematic structural view of a first terminal according to an embodiment of the present invention;

FIG. 7 is a schematic structural view of a second terminal according to an embodiment of the present invention;

FIG. 8 is a flow chart of a method for controlling a push message according to an embodiment of the present invention;

5 FIG. 9 is a flow chart of a processing operation performed by a terminal according to a push message control policy;

FIG. 10 is a flow chart of a processing operation performed by a push sending agent according to a push message control policy;

10 FIG. 11 is a flow chart of sending a push message control policy from a terminal to a push sending agent;

FIG. 12 is a flow chart of a first method for controlling a push message according to an embodiment of the present invention; and

15 FIG. 13 is a flow chart of a second method for controlling a push message according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

20 **[0027]** To make the objectives and advantages of the embodiments of the present invention more comprehensible, the embodiments of the present invention are further illustrated below in detail with reference to the accompanying drawings.

[0028] First, four kinds of devices for controlling a push message provided in the embodiments of the present invention are introduced, that is, two kinds of push sending agents and two kinds of terminals.

25 **[0029]** FIG. 4 is a schematic structural view of a first push sending agent according to an embodiment of the present invention. The push sending agent includes a push message processing module and a policy storage module.

[0030] The push message processing module is adapted to receive a push message sent by a PI, compare the received push message with a matching condition in a push message control policy stored by the policy storage module, and process the received push message according to a processing mode corresponding to the matching condition that is satisfied by the push message.

[0031] The policy storage module is adapted to store the push message control policy containing the matching condition and the corresponding processing mode that is set by a terminal.

35 **[0032]** In the first push sending agent provided in the embodiment of the present invention, a push message control policy set by a terminal is stored, and when a received push message satisfies a matching condition in the push message control policy, the received push message is processed according to a processing mode corresponding to the matching condition, which realizes control of the push message, so as to enhance the user experience.

[0033] The push message processing module of the first push sending agent may include a processing execution module and a resolution control module.

40 **[0034]** The processing execution module is adapted to receive the push message sent by the PI, send the received push message to a push receiving agent in the terminal when the matching condition is a push content that the terminal is allowed to receive, drop the push message or forward the push message to other terminals when the matching condition is a push content that the terminal is not allowed to receive, and temporarily store the push message when the matching condition is a push content that the terminal is currently not allowed to receive according to a resolution control result obtained by the resolution control module.

45 **[0035]** The resolution control module is adapted to resolve the push message control policy stored by the policy storage module, and compare the push message received by the processing execution module with the matching condition in the push message control policy to determine the matching condition that is satisfied by the push message, so as to obtain the resolution control result.

50 **[0036]** The push message processing module may further include a feedback module, adapted to feed back a success message to the PI when the processing execution module sends the push message to the push receiving agent in the terminal; and feed back a failure message to the PI when the processing execution module drops the push message, forwards the push message to other terminals, or temporarily stores the push message.

[0037] The first push sending agent provided in the embodiment of the present invention is applicable to the case that a push sending agent stores a push message control policy set by a terminal, and uses the stored push message control policy when controlling a push message.

55 **[0038]** FIG. 5 is a schematic structural view of a second push sending agent according to an embodiment of the present invention. The push sending agent includes a push message processing module and a policy reading module.

[0039] The push message processing module is adapted to receive a push message sent by a PI, compare the

received push message with a matching condition in a push message control policy read by the policy reading module, and process the received push message according to a processing mode corresponding to the matching condition that is satisfied by the push message.

[0040] The policy reading module is adapted to read the push message control policy containing the matching condition and the corresponding processing mode from a terminal.

[0041] In the second push sending agent provided in the embodiment of the present invention, a push message control policy set by a terminal is read, and when a received push message satisfies a matching condition in the push message control policy, the received push message is processed according to a processing mode corresponding to the matching condition, which realizes control of the push message, so as to enhance the user experience.

[0042] The push message processing module of the second push sending agent may include a processing execution module and a resolution control module.

[0043] The processing execution module is adapted to receive the push message sent by the PI, send the received push message to a push receiving agent in the terminal when the matching condition is a push content that the terminal is allowed to receive, drop the push message or forward the push message to other terminals when the matching condition is a push content that the terminal is not allowed to receive, and temporarily store the push message when the matching condition is a push content that the terminal is currently not allowed to receive according to a resolution control result obtained by the resolution control module.

[0044] The resolution control module is adapted to resolve the push message control policy read by the policy reading module, and compare the push message received by the processing execution module with the matching condition in the push message control policy to determine the matching condition that is satisfied by the push message, so as to obtain the resolution control result.

[0045] The push message processing module may further include a feedback module, adapted to feed back a success message to the PI when the processing execution module sends the push message to the push receiving agent in the terminal; and feed back a failure message to the PI when the processing execution module drops the push message, forwards the push message to other terminals, or temporarily stores the push message.

[0046] The second push sending agent provided in the embodiment of the present invention is applicable to the case that a terminal sets and stores a push message control policy, and a push sending agent reads the push message control policy from the terminal when controlling a push message.

[0047] FIG. 6 is a schematic structural view of a first terminal according to an embodiment of the present invention, which includes a policy setting module, a policy storage module, and a push message processing module.

[0048] The policy setting module is adapted to set a push message control policy containing a matching condition and a corresponding processing mode.

[0049] The policy storage module is adapted to store the push message control policy set by the policy setting module.

[0050] The push message processing module is adapted to receive a push message sent by a push sending agent, compare the received push message with the matching condition in the push message control policy stored by the policy storage module, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the received push message.

[0051] In the first terminal provided in the embodiment of the present invention, a push message control policy is set and stored, and when a received push message satisfies a matching condition in the push message control policy, the received push message is processed according to a processing mode corresponding to the matching condition, which realizes control of the push message, so as to enhance the user experience.

[0052] The first terminal provided in the embodiment of the present invention may further include an application module adapted to perform corresponding service processing according to the push message. In this case, the push message processing module includes a processing execution module and a resolution control module.

[0053] The processing execution module is adapted to receive the push message sent by the push sending agent, send the push message to the application module in the terminal when the matching condition is a push content that the terminal is allowed to receive, drop the push message or forward the push message to other terminals when the matching condition is a push content that the terminal is not allowed to receive, and temporarily store the push message when the matching condition is a push content that the terminal is currently not allowed to receive according to a resolution control result obtained by the resolution control module.

[0054] The resolution control module is adapted to resolve the push message control policy in the policy storage module, and compare the push message received by the processing execution module with the matching condition in the push message control policy stored by the policy storage module to determine the matching condition that is satisfied by the push message, so as to obtain the resolution control result.

[0055] The push message processing module may further include a feedback module, adapted to feed back a success message to the push sending agent when the processing execution module sends the push message to the application module; and feed back a failure message to the push sending agent when the processing execution module drops the push message, forwards the push message to other terminals, or temporarily stores the push message.

[0056] The first terminal provided in the embodiment of the present invention is applicable to the case that a terminal sets and stores a push message control policy and uses the stored push message control policy to control a push message.

[0057] FIG. 7 is schematic structural view of a second terminal according to an embodiment of the present invention, which includes a policy setting module and a policy sending module.

[0058] The policy setting module is adapted to set a push message control policy containing a matching condition and a corresponding processing mode.

[0059] The policy sending module is adapted to send the push message control policy set by the policy setting module to a push sending agent.

[0060] In the second terminal provided in the embodiment of the present invention, a push message control policy is set and then sent to a push sending agent, such that the push sending agent performs control on a push message according to the push message control policy sent by the terminal after receiving the push message, which realizes control of the push message, so as to enhance the user experience.

[0061] The terminal provided in the embodiment of the present invention is applicable to the case that a terminal sets a push message control policy, but a push sending agent controls a push message according to the push message control policy sent by the terminal.

[0062] The above push sending agents and terminals provided in the embodiments of the present invention may form systems for controlling a push message in the embodiments of the present invention. The first push sending agent and the second terminal provided in the embodiments of the present invention may form a first system provided in an embodiment of the present invention; the first terminal in the embodiment of the present invention and an ordinary push sending agent that only accomplishes a function of transmitting a push message may form a second system provided in an embodiment of the present invention; and the second push sending agent in the embodiment of the present invention and a terminal that only accomplishes a function of setting a push message control policy may form a third system provided in an embodiment of the present invention.

[0063] Next, a method for controlling a push message provided in an embodiment of the present invention is introduced.

[0064] FIG. 8 is a flow chart of a method for controlling a push message according to an embodiment of the present invention. A push message control policy is set before the process starts. The process includes the following blocks.

[0065] In Block 801, the push message is compared with a matching condition in the push message control policy.

[0066] In this block, the push message control policy may be submitted by a user.

[0067] In Block 802, the push message is processed according to a processing mode corresponding to the matching condition that is satisfied by the push message.

[0068] In the method for controlling a push message provided in the embodiment of the present invention, a push message control policy is set, and when a push message satisfies a matching condition in the push message control policy, the push message is processed according to a processing mode corresponding to the matching condition, which realizes control of the push message, so as to enhance the user experience.

[0069] Based on the devices for controlling a push message provided in the embodiments of the present invention, the method for controlling a push message provided in the embodiment of the present invention may have two embodiments. The two embodiments are introduced below together with a specific SIP push service.

[0070] Before the specific preferred embodiments are introduced, specific examples of a matching condition in a push message control policy applied in the two embodiments are listed as follows.

[0071] The matching conditions in the set push message control policy may include: a user identifier (ID), a maximum message length threshold, service control, content control, and control of trusted PIs. The corresponding five push message control policies are respectively introduced below.

First, user ID

[0072] The setting of this matching condition aims at determining that a terminal to which a push message is to be sent is a terminal that sets a push message control policy according to the user ID when a push sending agent controls the push message.

Second, maximum message length threshold

[0073] A content length of a push message is controlled in such push message control policy. Specifically, a terminal sets a length of a push message and stores the set length in the terminal or sends the set length to a push sending agent for storage. When a length of a received push message exceeds the set length, the terminal is always or currently not allowed to receive the push message, and the push message may be automatically dropped, transferred to other terminals, or temporarily stored with reference to the stored push message control policy.

Third, service control

[0074] A service received by a terminal is controlled, which is mainly realized by setting a service ID corresponding to a service type that the terminal is allowed, not allowed, or currently not allowed to receive. A push sending agent may send a push message sent from a PI to a push receiving agent in the terminal through an SIP message, in which an Accept-Contact header in the SIP message indicates the service type.

[0075] If a push message control policy is stored in the terminal, a list of service types that the terminal does not wish to receive or currently does not wish to receive or a list of services that the terminal wishes to receive may be defined, and the terminal accomplishes the control of the service type to select to drop the push message, send the push message to other terminals, or temporarily store the push message.

[0076] FIG. 9 is a flow chart of a processing operation performed by a terminal according to a push message control policy. It is assumed that a service type of a push message is a multimedia message in this process. The process includes the following steps.

[0077] In Step 901, after receiving a push message sent by a PI, a push sending agent sends the push message to a push receiving agent through NOTIFY or MESSAGE in an SIP message.

[0078] In Step 902, after receiving the push message, the push receiving agent returns a 200OK message to the push sending agent to notify the push sending agent that the push message has been successfully received.

[0079] In Step 903, the push receiving agent views a service type carried in an Accept-Contact header field in the SIP message that carries the push message, and determines that the push message is a multimedia message. If the terminal is not allowed to receive a service message of a multimedia message in the push message control policy, the push receiving agent drops the push message without sending the push message to an application module, so that the user does not know the arrival of the message; if the terminal is currently not allowed to receive the multimedia message service in the push message control policy, the push receiving agent temporarily stores the push message; and if the terminal is allowed to receive the service message of the multimedia message in the push message control policy, the push message is sent to the application module for performing corresponding service processing.

[0080] If the push message control policy is sent to the push sending agent for storage, a list of services that the terminal is not allowed to receive or currently not allowed to receive or a list of services that the terminal is allowed to receive may be defined similarly, and the push sending agent accomplishes the control of the service type to select to drop the push message, send the push message to other terminals, or temporarily store the push message. In this case, besides being indicated in the Accept-Contact header field in the SIP message encapsulated by the push sending agent, the service type of the push message may also be determined according to a receiving port number of the push sending agent or a source port address of the PI.

[0081] FIG. 10 is a flow chart of a processing operation performed by a push sending agent according to a push message control policy. The process includes the following steps.

[0082] In Step 1001, a PI sends a push message to the push sending agent.

[0083] In Step 1002, the push sending agent sends a response to the PI.

[0084] In Step 1003, the push sending agent compares the push message with a matching condition in the stored push message control policy, and if the matching condition satisfied by the push message is a push content that a terminal is allowed to receive, Step 1004 is performed; otherwise, if the matching condition satisfied by the push message is a push content that the terminal is not allowed to receive, the push message is dropped; and if the matching condition satisfied by the push message is a push content that the terminal is currently not allowed to receive, the push message is temporarily stored.

[0085] In Step 1004, the push sending agent sends the push message to a push receiving agent through MESSAGE or NOTIFY in an SIP message.

[0086] In Step 1005, the push receiving agent returns a 200OK message to the push sending agent.

Fourth, content control

[0087] A terminal may set a content key word of a push message that is not allowed or currently not allowed to be received, for example, reactionary characters, violent characters, advertisement characters, unhealthy characters, politically sensitive characters, and the like.

[0088] The terminal may also set a content key word of a push message that is allowed to be received. For example, a push message containing key words about finance and economics, news, and sports is allowed to be received, and a push message not containing such key words is not received.

Fifth, trusted PI

[0089] A terminal may set an ID of a trusted PI. Once a push message is received, if a PI sending the push message

is a trusted PI, the push message is allowed to be received.

[0090] Table 1 shows examples of specific matching conditions set in the push message control policy. In the actual application, the valid time may also be set for the matching conditions.

Table 1

Specification definition	Parameter or description	Processing method	Valid time	Value
User ID	User ID			sip:alice@sample.com
Maximum Message Size	Maximum message length threshold	Drop/pause	9:00-11:00	1300 bytes
App ID	Service ID	Drop/pause/store	9:00-11:00	MMS service: x-wap-application:mms.ua
Feature Tag	Service ID	Drop/pause/store	9:00-11:00	MMS service: +g.oma.iari.push.mms.ua
Content Filter	Content key word	Drop	00:00-00:00	Reactionary characters, violent characters, advertisements, and the like
Whitelist	Trusted PI	Drop/pause	00:00-00:00	www.yahoo.com

First embodiment

[0091] A terminal sets a push message control policy and sends the set push message control policy to a push sending agent on a server for storage. After a PI sends a push message to the push sending agent, the push sending agent processes the push message according to the stored push message control policy. FIG. 11 shows a specific process of sending the set push message control policy from the terminal to the push sending agent, that is, the terminal sends the push message control policy to the push sending agent by encapsulating the push message control policy in an SIP message. The process shown in FIG. 11 includes the following steps.

[0092] In Step 1101, after setting the push message control policy, the terminal carries the push message control policy in a REGISTER or SUBSCRIBE request message and sends the request message to the push sending agent for storage.

[0093] In Step 1102, after receiving the push message control policy, the push sending agent returns a 200OK message to the terminal, which indicates that the push message control policy has been successfully received and stored.

[0094] The REGISTER or SUBSCRIBE request message is a specific example of the SIP message. Other SIP messages may also be adopted to carry the push message control policy. The specific carrying manner may include carrying the push message control policy in an SIP header field of an SIP push message. Moreover, the carrying the push message control policy in the SIP message is also a specific application in combination with an SIP push service. In other services besides the SIP push service, other messages may also be adopted to carry the push message control policy, which is associated with the specific application environment.

[0095] Extensible markup language (XML) is a set of rules for creating semantic tags that divide a document into many elements and identify the elements, which is a platform-independent method for describing data. Briefly, the data created by using XML can be read by any application on any platform. In the embodiments of the present invention, the push message control policy may be created by using XML and carried in the SIP message in the format of an XML document.

[0096] Three examples of carrying the push message control policy in the SIP message are introduced below.

[0097] In the first example, the push message control policy is carried in a ua-profile header field of an event in a SUBSCRIBE message. The specific SUBSCRIBE message structure is shown as follows. The message structure is a common sense for those skilled in the art, and thus is illustrated briefly herein.

```

SUBSCRIBE sip:receiver agent@homel.net SIP/2.0; Message name
Via: SIP/2.0/UDP[5555::aaa:bbb:ccc:ddd]: 357;comp=sigcomp;branch=z9hG4bK
nashds7; Path where the message passes through
Max-Forwards: 70; Hop that the message passes through
Route: <sip:pcscfl.visitedl.net:7531;lr;comp=sigcomp>,
<sip:orig@scscfl.homel.net;lr>; Designated route information
From: <sip:receiver agent@homel.net>;tag=31415; Message source

```

To: < sip:reveiver agent@homel.net>; Message destination
 Accept-Contact: *;+g.oma.icsi.push';+g.oma.iari.push.PushSyncML;;require;explicit; Content that can be received
 Event: ua-profile;profile-type="application"; Event, in which the push message
 control policy is carried in the ua-profile header field in the event
 Call-ID: b89rjhnedlrfjflslj40a222; Session number
 CSeq: 85 SUBSCRIBE; Transaction sequence
 P-Preferred-Identity: "Receiver agent" <sip:reveiver agent@homel.net>; Terminal
 that wishes to accept
 Privacy: none
 Expires: 600000; Time limit
 Accept: application/vnd.syncml.ds.notification; Content format
 Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>; Contact address
 Content-Length: 0; Content length

[0098] The specific push message control policy is carried in the format of an XML document, the structure of which is shown as follows. The XML document structure is a common sense for those skilled in the art, and is introduced briefly herein.

```
<?xml version=" 1.0" encoding="UTF-8"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf syntax-ns#"
xmlns:prf="http://www.openmobilealliance.org/tech/profiles/UAPROF/ccppschem-200212
12#" xmlns:mms="http://www.wapforum.org/profiles/MMS/ccppschem-20010111#">
  <prf:component>
    <rdf:Description rdf:ID="Filterlist">
      <rdf:type
25 rdf:resource="http://www.openmobilealliance.org/tech/profiles/UAPROF/ccppschem-2002
1212#filterlist" />; The above is the specification of the current XML document.
      <prf:User_ID>a@example.com</prf:User_ID>; User ID
      <prf:MaxMessageSize>1500</prf:MaxMessageSize>; Maximum content length
value
30 <prf:Sevice_ID_Drop>; Service ID for indicating a service type, in which a push
message conforming to the service type is dropped.
      <rdf:Bag>
        <rdf:li> x-wap-application:sms.ua </rdf:li>; Short message service
        <rdf:li> x-wap-application:sms.ua </rdf:li>; Multimedia short message
35 service
      </rdf:Bag>
      </prf:Sevice_ID_Drop>
      <prf: Content_Drop>; Content key word, in which a push message containing such
content key word is dropped.
      <rdf:li> reactionary </rdf:li>; Specific key word
40 <rdf:li> violent </rdf:li>; Specific key word
      </rdf:Bag>
      </prf:Content_Drop >
      <prf:PI_Permitted>; ID of a PI, in which a push message from the PI is
permitted.
      <rdf:Bag>
        <rdf:li> www.example1.com </rdf:li>; ID of a specific trusted PI
        <rdf:li> www.example2.com </rdf:li>; ID of a specific trusted PI
        </rdf:Bag>
      </prf:PI_Permitted>
      </rdf:Description>
50 </prf:component>
</rdf:RDF>
```

[0099] In the second example, the push message control policy is carried in Accept header field and Content-type of a SUBSCRIBE message. The specific SUBSCRIBE message structure is shown as follows. The meanings of various parts are not described again.

SUBSCRIBE sip:receiver agent@homel.net SIP/2.0
 Via:SIP/2.0/UDP[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bK

nashds7

```

Max-Forwards: 70
Route: <sip:pcscfl.visitedl.net:7531 ;lr;comp=sigcomp>,
<sip:orig@scscfl.homel .net;lr>
From: <sip:receiver agent@homel.net>;tag=31415
To: <sip:reveiver agent@homel.net>
Accept-Contact: *,+g.oma.icsi.push',+
g.oma.iari.push.PushSyncML;;require;explicit
Event: ua-profile;profile-type="application"
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 85 SUBSCRIBE
P-Preferred-Identity: "Receiver agent" <sip:reveiver agent@homel.net>
Privacy: none
Expires: 600000
Accept: application/filterlist+xml; The Accept header field identifies that the push
message control policy is carried in the format of an XML document.
Content-type: application/filterlist +xml; The push message control policy in the
format of the XML document is carried in the Content-type header field.
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0

```

[0100] The specific push message control policy is carried in the format of the XML document, the structure of which is shown as follows.

```

<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XMLSPY v5 rel. 4 U (http://www.xmlspy.com) by Registered
(Registered) -->
<!DOCTYPE Filters SYSTEM "C:\Documents and
Settings\user\desktop\filters.dtd">; The above is the specification of the current XML
document format.
<Filters>
  <Filter Filter_Item="APP_ID" Pro_Methord="Drop">; Service ID for
indicating a service type, in which a push message containing the service ID is dropped.
    <User_ID>a@example.com</User_ID>; User ID
    <Filter_Value>mms</Filter_Value>; The specific service type is a
multimedia message service.
    <Run_Time>00:00-00:00</Run_Time>; Valid time
  </Filter>
  <Filter Filter_Item="APP_ID" Pro_Mcthord="Pausc"> Service ID for
indicating a service type, in which the sending of a push message containing the service ID is
paused.
    <User_ID>a@example.com</User_ID>; User ID
    <Filter_Value>email</Filter_Value>; The specific service type is an
E-mail service.
    <Run_Time>18:00-5:00</Run_Time>; Valid time
  </Filter>
  <Filter Filter_Item="Key_Words" Pro_Methord="Drop"> Indicating a key
word, in which a push message containing the key word is dropped.
    <User_ID>a@example.com</User_ID>; User ID
    <Filter_Value> violent </Filter_Value>; Specific key word
    <Run_Time>00:00-00:00</Run_Time>; Valid time
  </Filter>
  <Filter Filter_Item="Max_Size" Pro_Methord="Drop">; Indicating a
maximum content length, in which a push message exceeding the length is dropped.
    <User_ID>a@example.com</User_ID>; User ID
    <Filter_Value>1500</Filter_Value>; Specific maximum content length
value
    <Run_Time>00:00-00:00</Run_Time>; Valid time
  </Filter>
  <Filter Filter_Item="PI" Pro_Methord="Permitted">; ID of a PI, in which a
push message containing the ID of the PI is permitted.
    <User_ID>a@example.com</User_ID>; User ID
    <Filter_Value>sina.com.cn</Filter_Value>; Specific ID of the PI

```

```

        <Run_Time>18:00-5:00</Run _Time>; Valid time
    </Filter>
</Filters>

```

[0101] In the third example, a header field carrying the push message control policy is extended in an SIP push message. Three extended header fields may be adopted to carry the push message control policy.

[0102] The first extended header field is SIP-Push-Trusted-List, which extends the existing SIP header field and is adapted to carry the push message control policy. Certainly, the header field can also carry other SIP service-based control policies. Several specific realizing manners and rules are illustrated below through examples.

```

SIP-Push-Trusted-List:<sip:alice@sample.com>
SIP-Push-Trusted -List:<sip:bob@sample.com>
SIP-Push-Trusted -List:<www.sample.com>
SIP-Push-Trusted-List:13612345678

```

[0103] The permitted object in the header field is mainly an ID of a PI, which may be a host name, a telephone number, or a uniform resource identifier (URI) of the SIP.

[0104] The second extended header field is SIP-Push-Block-List for carrying a push message type required to be dropped in the SIP push service. Certainly, the header field may also carry other SIP service-based drop messages. Several specific realizing manners and rules are illustrated below through examples.

```

SIP-Push-Block-List:<sip:alice@sample.com>,
App_ID=x-wap-application:mms.ua, Max=1800bytes,Content="reactionary"
SIP-Push-Block-List:<sip:bob@sample.com>
SIP-Push-Block-List:<www.sample.com>
SIP-Push-Block-List: 13612345678

```

[0105] The dropped object in the above header field may be an ID of a PI. Alternatively, a multimedia message service may be dropped according to an indication in the APP ID, a push message larger than 1800 bytes may be dropped according to the specification of the Max field, or a push message having reactionary content may be dropped according to the Content field.

[0106] The third extended header field is SIP-Push-Permit-List for carrying a push message control policy associated with the SIP push service. Certainly, the header field may also carry other SIP service-based control policies. Several specific realizing manners and rules are illustrated below through examples.

```

SIP-Push-Permit-List:<sip:alice@sample.com>,
App_ID=x-wap-application:mms.ua,Max=1800bytes,permit=allow,
SIP-Push-Permit-List:<sip:bob@sample.com>,permit=allow
SIP-Push-Permit-List:www.sample.com,permit=refuse
SIP-Push-Permit-List: 13612345678,permit=refuse

```

[0107] In the above header field, the permitted object may be an ID of a PI, the service type required to be allowed is a multimedia message service indicated in the APP_ID, and a push message smaller than 1800 bytes is allowed according to the specification of the Max field. The authorization right is accomplished by the permit attached field.

[0108] A completed SIP message may be formed by the extended header fields provided in the embodiment of the present invention together with relevant header fields in other SIP messages.

[0109] In the first embodiment, the control processing is performed on a received push message according to the process shown in FIG. 12 after Steps 1101 and 1102 shown in FIG. 11. The process shown in FIG. 12 includes the following blocks.

[0110] In Block 1201, a push sending agent receives a push message from a PI.

[0111] In Block 1202, the push sending agent compares the received push message with a matching condition in a push message control policy to determine, for example, whether the push message has an excessively large content, whether the push message contains a key word that is not wished to be received, whether the push message is a service not wished to be received currently, whether the push message is from a trusted PI, whether the current time is a time at which the push message is wished or not wished to be received, whether the set push message control policy is applied, and the like. If the matching condition satisfied by the push message is a push content that the terminal is allowed to receive, Block 1203 is performed; otherwise, if the matching condition satisfied by the push message is a push content that the terminal is not allowed to receive, the push sending agent drops the push message; and if the matching condition satisfied by the push message is a push content that the terminal is currently not allowed to receive,

the push sending agent temporarily stores the push message, and Block 1206 is directly performed after the operation of dropping or temporarily storing the push message is finished.

[0112] In Block 1203, the push sending agent sends the push message to an SIP/IP core network. The specific sending manner includes carrying the push message in an SIP message and sending the SIP message to the SIP/IP core network by the push sending agent.

[0113] In Block 1204, the SIP/IP core network sends the push message to a push receiving agent.

[0114] In Block 1205, the push receiving agent returns an acknowledgement message to the push sending agent.

[0115] In Block 1206, the push sending agent returns a current transmission status of the push message to the PI. In this block, if the push sending agent sends the push message to the push receiving agent, a success message is returned to the PI; and if the push sending agent drops or temporarily stores the push message, a failure message is returned to the PI.

Second preferred embodiment

[0116] A terminal sets a push message control policy and stores the set push message control policy locally. After a PI sends a push message to a push sending agent, the push sending agent sends the push message to the terminal, and the terminal processes the push message according to the stored push message control policy. FIG. 13 shows a process of processing the received push message by the terminal. The process includes the following blocks.

[0117] In Block 1301, a push sending agent sends a push message received from a PI to a push receiving agent in a terminal. The specific sending manner may include carrying the push message in a header field of an SIP message and sending the SIP message to the push receiving agent by the push sending agent.

[0118] In Block 1302, the push receiving agent compares the received push message with a matching condition in a push message control policy to determine, for example, whether the push message has an excessively large content, whether the push message contains a key word that is not wished to be received, whether the push message is a message that is not wished to be received currently, whether the push message is from a trusted PI, and the like. If the matching condition satisfied by the push message is a push content that the terminal is allowed to receive, Block 1303 is performed; otherwise, if the matching condition satisfied by the push message is a push content that the terminal is not allowed to receive, the push receiving agent drops the push message; and if the matching condition satisfied by the push message is a push content that the terminal is currently not allowed to receive, the push receiving agent temporarily stores the push message, and Block 1304 is directly performed after the operation of dropping or temporarily storing the push message is finished. The push receiving agent may also return a message that the push message has been deleted to the push sending agent when dropping or temporarily storing the push message before directly performing Block 1304. This block is optional.

[0119] In Block 1303, the push receiving agent returns an acknowledgement message to the push sending agent and sends the push message to an application module in the terminal for performing corresponding service.

[0120] In Block 1304, the push sending agent reports a current transferring status of the push message to the PI. In this block, if the push receiving agent sends the push message to the application module in the terminal, a success message is returned to the PI; and if the push receiving agent drops or temporarily stores the push message and returns the message that the push message has been deleted to the push sending agent, the push sending agent returns a failure message to the PI.

[0121] The push message control policies provided in the embodiments of the present invention all need to be converted into a format that can be received by the push sending agent or stored by the terminal. The push message control policy may be stored and sent in the format of an XML document as mentioned in the above embodiments. A framework structure of an XML document including matching conditions and processing modes that can be set in the above five types of push message control policies is further given below. The specific statement structure is a common sense for those skilled in the art, and will not be described herein again. The push message control policy may be formed by filling the specific matching condition and processing mode according to the document structure, and other actually required matching conditions and processing modes may also be extended based on such document structure.

```
<?xml version=" 1.0" encoding="UTF-8"?>
<!--W3C Schema generated by XMLSPY v5 rel. 4 U
(http://www.xmlspy.com)-->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified">; The above is the specification of the XML document.
  <xs:element name="Filter">
    <xs:complexType>
      <xs:sequence>
        <xs:element ref="User_ID" maxOccurs="unbounded"/>; User
```

ID

```
<xs:element ref="Filter_Value" maxOccurs="unbounded"/>;
```

Specific matching condition can be filled, for example, service ID, specific key word, or the like

```
5 <xs:element ref="Run_Time" maxOccurs="unbounded"/>;
```

Valid time

```
</xs:sequence>
```

```
<xs:attribute name="Filter_Item" use="required">
```

```
<xs:simpleType>
```

```
10 <xs:restriction base="xs:NMTOKEN">
```

```
<xs:enumeration value="Key_Words"/>; Key word
```

```
<xs:enumeration value="PI"/>; ID of an PI
```

tag, for identifying, for example, services

```
<xs:enumeration value="Max_Size"/>; Maximum
```

```
15 message length
```

```
<xs:enumeration value="APP_ID"/>; Service ID
```

```
</xs:restriction>
```

```
</xs:simpleType>
```

```
</xs:attribute>
```

```
<xs:attribute name="Pro_Methord" use="required">
```

```
20 <xs:simpleType>
```

```
<xs:restriction base="xs:NMTOKEN">
```

```
<xs:enumeration value="Pause"/>; Pause
```

```
<xs:enumeration value="Save"/>; Save
```

```
<xs:enumeration value="Permitted"/>; Permit
```

```
25 <xs:enumeration value="Drop"/>; Drop
```

```
</xs:restriction>
```

```
</xs:simpleType>
```

```
</xs:attribute>
```

```
</xs:complexType>
```

```
</xs:element>
```

```
30 <xs:element name="Filter_Value" type="xs:string"/>; The type of the specific  
matching condition that can be filled is a string type.
```

```
<xs:element name="Filters">
```

```
<xs:complexType>
```

```
<xsa:sequence>
```

```
35 <xs:element ref="Filter" maxOccurs="unbounded"/>
```

```
</xsa:sequence>
```

```
</xs:complexType>
```

```
</xs:element>
```

```
40 <xs:element name="Run_Time" type="xs:string"/>; The type of the valid  
time is string.
```

```
<xs:element name="User_ID" type="xs:string"/>; The type of the user ID is  
string.
```

```
</xs:schema>
```

[0122] In the method, the device, and the system for controlling a push message provided in the embodiments of the present invention, a push message control policy containing a matching condition and a corresponding processing mode is set, and when a received push message satisfies the matching condition in the push message control policy, the received push message is processed according to the processing mode corresponding to the matching condition, thereby realizing control of the push message, so as to enhance the user experience.

[0123] To sum up, the above descriptions are merely preferred embodiments of the present invention, but not intended to limit the protection scope of the present invention. Any modification, equivalent replacement, and improvement made without departing from the spirit and principle of the present invention fall within the protection scope of the present invention.

Claims

1. A method for controlling a push message, comprising:

comparing the push message with a matching condition in a preset push message control policy, and processing the push message according to a processing mode corresponding to the matching condition that is satisfied by the push message.

- 5 **2.** The method according to claim 1, wherein the push message control policy is set by a push receiving agent in a terminal and sent to a push sending agent in a server for storage, and the comparing the push message with the matching condition in the push message control policy is performed by the push sending agent.

- 10 **3.** The method according to claim 2, wherein before the comparing the push message with the matching condition in the push message control policy, the method further comprises: receiving, by the push sending agent, the push message sent by a push message initiator (PI);
when the matching condition is a push content that the terminal is allowed to receive, the processing the push message comprises: sending, by the push sending agent, the push message to the push receiving agent in the terminal;
15 when the matching condition is a push content that the terminal is not allowed to receive, the processing the push message comprises: dropping, by the push sending agent, the push message or forwarding the push message to other terminals; and
when the matching condition is a push content that the terminal is currently not allowed to receive, the processing the push message comprises: temporarily storing, by the push sending agent, the push message.
20

- 4.** The method according to claim 2, wherein the sending the push message control policy to the push sending agent is performed by carrying the push message control policy in a session initiation protocol (SIP) message.

- 25 **5.** The method according to claim 4, wherein the carrying the push message control policy in the SIP message comprises: carrying the push message control policy in a ua-profile header field or an accept header field and a Content-type of the SIP message; or
carrying the push message control policy in an extended header field of the SIP message, that is, SIP-Push-Trusted-List, and/or SIP-Push-Block-List, and/or SIP-Push-Permit-List.

- 30 **6.** The method according to claim 3, wherein after the sending, by the push sending agent, the push message to the push receiving agent in the terminal, the method further comprises: returning, by the push sending agent, a success message to the PI; and
after the dropping, by the push sending agent, the push message, forwarding the push message to other terminals, or temporarily storing the push message, the method further comprises: returning, by the push sending agent, a failure message to the PI.
35

- 7.** The method according to claim 1, wherein the push message control policy is set and stored by a push receiving agent in a terminal, and the comparing the push message with the matching condition in the push message control policy is performed by the push receiving agent.
40

- 8.** The method according to claim 7, wherein before the comparing the push message with the matching condition in the push message control policy, the method further comprises: receiving, by the push receiving agent, the push message sent by a push sending agent;
when the matching condition is a push content that the terminal is allowed to receive, the processing the push message comprises: sending, by the push receiving agent, the push message to an application module in the terminal;
45 when the matching condition is a push content that the terminal is not allowed to receive, the processing the push message comprises: dropping, by the push receiving agent, the push message or forwarding the push message to other terminals; and
when the matching condition is a push content that the terminal is currently not allowed to receive, the processing the push message comprises: temporarily storing, by the push receiving agent, the push message.
50

- 9.** The method according to claim 8, wherein after the sending, by the push receiving agent, the push message to the application module in the terminal, the method further comprises: returning, by the push receiving agent, a success message to the push sending agent; and
55 after the dropping, by the push receiving agent, the push message, forwarding the push message to other terminals, or temporarily storing the push message, the method further comprises: returning, by the push receiving agent, a failure message to the push sending agent.

10. The method according to claim 2 or 7, wherein the matching condition in the push message control policy comprises: a user identifier (ID), and/or a maximum message length threshold, and/or a service control condition, and/or a content control condition, and/or a trusted PI.
- 5 11. The method according to claim 10, wherein the user ID is adapted to indicate an ID of the terminal that sets the push message control policy;
the maximum message length threshold is a maximum content length value of a push message that the terminal is allowed to receive;
the service control condition is adapted to indicate a service ID corresponding to a service type that the terminal is
10 allowed, not allowed, or currently not allowed to receive;
the content control condition is a content key word in a push message that the terminal is allowed, not allowed, or currently not allowed to receive; and
the trusted PI is an ID of a trusted PI corresponding to a push message that the terminal is allowed to receive.
- 15 12. The method according to claim 10, wherein the push message control policy further comprises a valid time of the matching condition.
13. A push message sending agent, comprising: a push message processing module and a policy storage module, wherein
20 the push message processing module is adapted to receive a push message sent by a push initiator (PI), compare the received push message with a matching condition in a push message control policy stored by the policy storage module, and process the received push message according to a processing mode corresponding to the matching condition that is satisfied by the push message; and
the policy storage module is adapted to store the push message control policy containing the matching condition
25 and the corresponding processing mode that is set by a terminal.
14. The sending agent according to claim 13, wherein the push message processing module comprises a processing execution module and a resolution control module,
the processing execution module is adapted to receive the push message sent by the PI, send the received push
30 message to a push receiving agent in the terminal when the matching condition is a push content that the terminal is allowed to receive, drop the push message or forward the push message to other terminals when the matching condition is a push content that the terminal is not allowed to receive, and temporarily store the push message when the matching condition is a push content that the terminal is currently not allowed to receive according to a resolution control result obtained by the resolution control module; and
35 the resolution control module is adapted to resolve the push message control policy stored by the policy storage module, and compare the push message received by the processing execution module with the matching condition in the push message control policy to determine the matching condition that is satisfied by the push message, so as to obtain the resolution control result.
- 40 15. The sending agent according to claim 14, wherein the push message processing module further comprises:

a feedback module, adapted to feed back a success message to the PI when the processing execution module sends the push message to the push receiving agent in the terminal; and feed back a failure message to the
PI when the processing execution module drops the push message, forwards the push message to other
45 terminals, or temporarily stores the push message.
16. A push message sending agent, comprising: a push message processing module and a policy reading module, wherein
the push message processing module is adapted to receive a push message sent by a push initiator (PI), compare
50 the received push message with a matching condition in a push message control policy read by the policy reading module, and process the received push message according to a processing mode corresponding to the matching condition that is satisfied by the push message; and
the policy reading module is adapted to read the push message control policy containing the matching condition and the corresponding processing mode from a terminal.
- 55 17. The sending agent according to claim 16, wherein the push message processing module comprises a processing execution module and a resolution control module,
the processing execution module is adapted to receive the push message sent by the PI, send the received push

message to a push receiving agent in the terminal when the matching condition is a push content that the terminal is allowed to receive, drop the push message or forward the push message to other terminals when the matching condition is a push content that the terminal is not allowed to receive, and temporarily store the push message when the matching condition is a push content that the terminal is currently not allowed to receive according to a resolution control result obtained by the resolution control module; and
the resolution control module is adapted to resolve the push message control policy read by the policy reading module, and compare the push message received by the processing execution module with the matching condition in the push message control policy to determine the matching condition that is satisfied by the push message, so as to obtain the resolution control result.

18. The sending agent according to claim 17, wherein the push message processing module further comprises:

a feedback module, adapted to feed back a success message to the PI when the processing execution module sends the push message to the push receiving agent in the terminal; and feed back a failure message to the PI when the processing execution module drops the push message, forwards the push message to other terminals, or temporarily stores the push message.

19. A terminal, comprising: a policy setting module, a policy storage module, and a push message processing module, wherein

the policy setting module is adapted to set a push message control policy containing a matching condition and a corresponding processing mode;

the policy storage module is adapted to store the push message control policy set by the policy setting module; and the push message processing module is adapted to receive a push message sent by a push sending agent, compare the received push message with the matching condition in the push message control policy stored by the policy storage module, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the received push message.

20. The terminal according to claim 19, further comprising: an application module, adapted to perform corresponding service processing according to the push message;

wherein the push message processing module comprises a processing execution module and a resolution control module,

the processing execution module is adapted to receive the push message sent by the push sending agent, send the push message to the application module in the terminal when the matching condition is a push content that the terminal is allowed to receive, drop the push message or forward the push message to other terminals when the matching condition is a push content that the terminal is not allowed to receive, and temporarily store the push message when the matching condition is a push content that the terminal is currently not allowed to receive according to a resolution control result obtained by the resolution control module; and

the resolution control module is adapted to resolve the push message control policy in the policy storage module, and compare the push message received by the processing execution module with the matching condition in the push message control policy stored by the policy storage module to determine the matching condition that is satisfied by the push message, so as to obtain the resolution control result.

21. The terminal according to claim 20, wherein the push message processing module further comprises a feedback module adapted to feed back a success message to the push sending agent when the processing execution module sends the push message to the application module; and feed back a failure message to the push sending agent when the processing execution module drops the push message, forwards the push message to other terminals, or temporarily stores the push message.

22. A terminal, comprising: a policy setting module and a policy sending module,

wherein

the policy setting module is adapted to set a push message control policy containing a matching condition and a corresponding processing mode; and

the policy sending module is adapted to send the push message control policy set by the policy setting module to a push sending agent.

23. A system for controlling a push message, comprising: a push sending agent and a terminal, wherein the push sending agent is adapted to store a push message control policy containing a matching condition and a corresponding processing mode that is set by the terminal, receive the push message sent by a push initiator (PI),

compare the received push message with the matching condition in the stored push message control policy, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the push message; and
the terminal is adapted to set the push message control policy containing the matching condition and the corresponding processing mode and send the push message control policy to the push sending agent.

24. A system for controlling a push message, comprising: a push sending agent and a terminal, wherein the terminal is adapted to set and store a push message control policy containing a matching condition and a corresponding processing mode, receive the push message sent by the push sending agent, compare the received push message with the matching condition in the stored push message control policy, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the received push message; and
the push sending agent is adapted to send the push message to the terminal.

25. A system for controlling a push message, comprising: a push sending agent and a terminal, wherein the terminal is adapted to set a push message control policy containing a matching condition and a corresponding processing mode; and
the push sending agent is adapted to read the push message control policy containing the matching condition and the corresponding processing mode from the terminal, receive the push message sent by a push initiator (PI), compare the received push message with the matching condition in the read push message control policy, and process the received push message according to the processing mode corresponding to the matching condition that is satisfied by the push message.

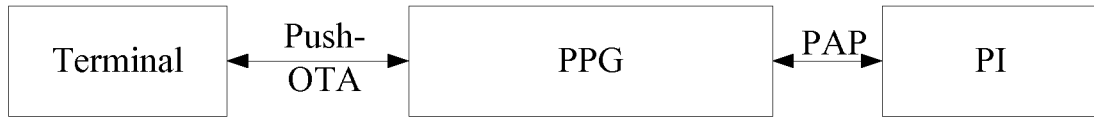


FIG. 1

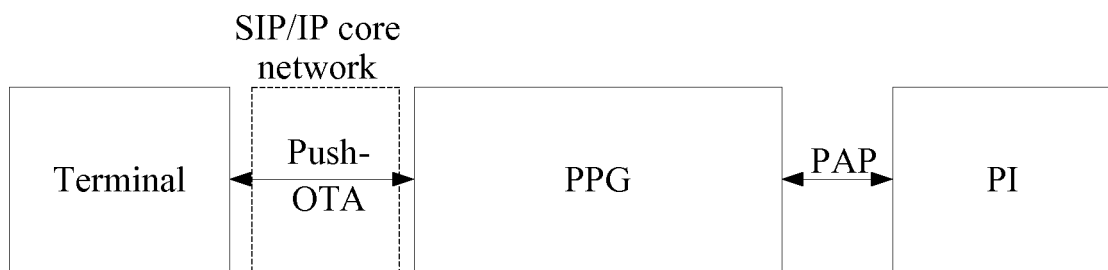


FIG. 2

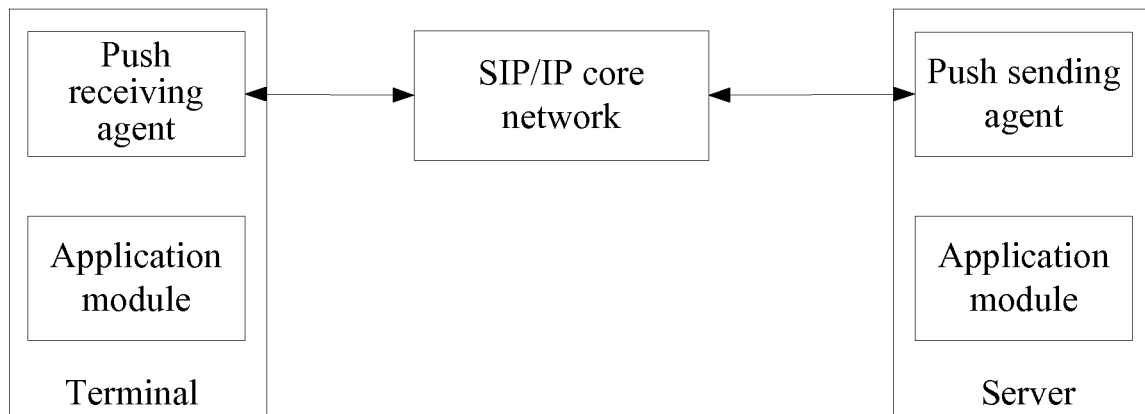


FIG. 3

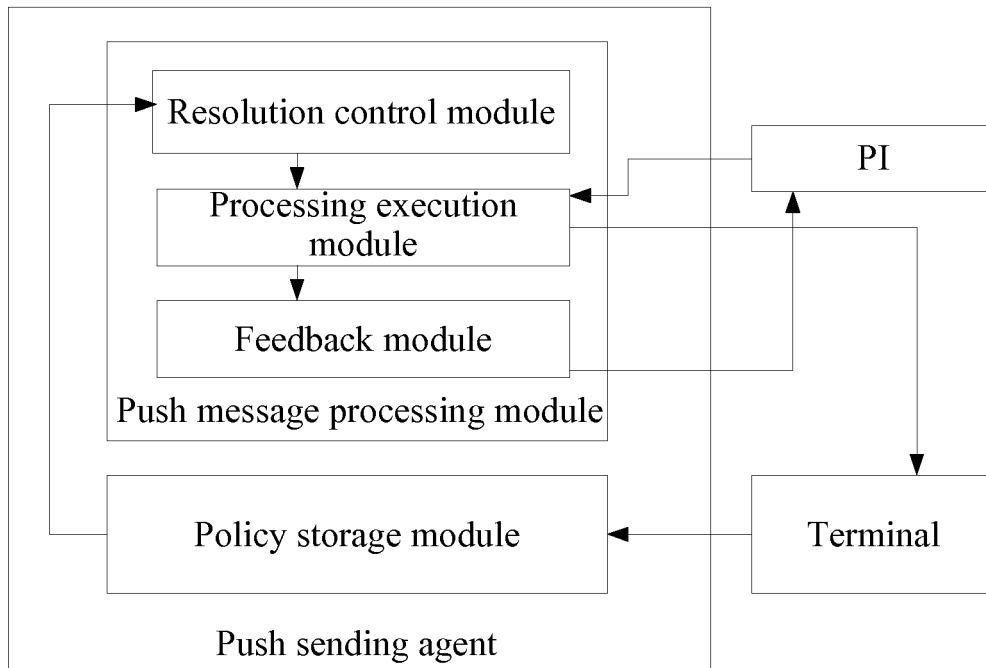


FIG. 4

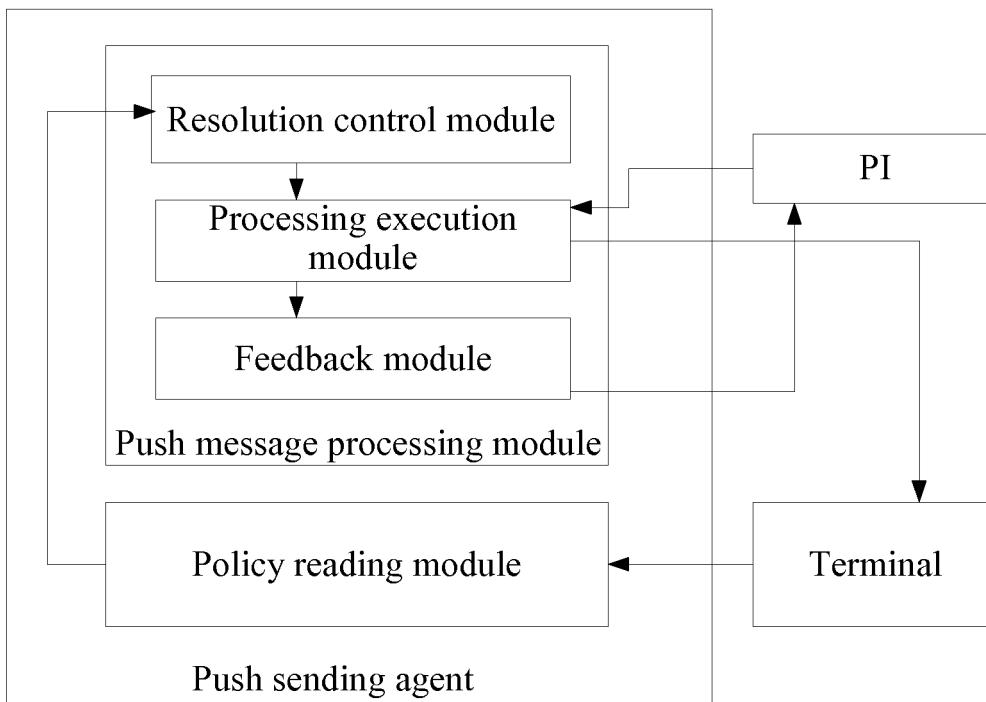


FIG. 5

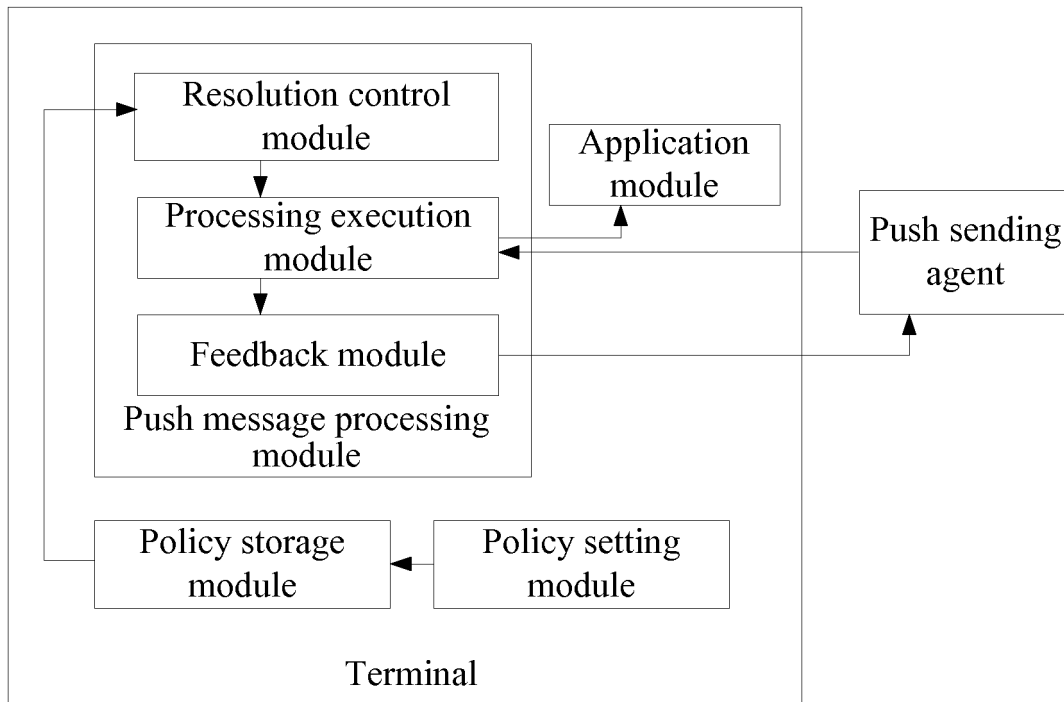


FIG. 6

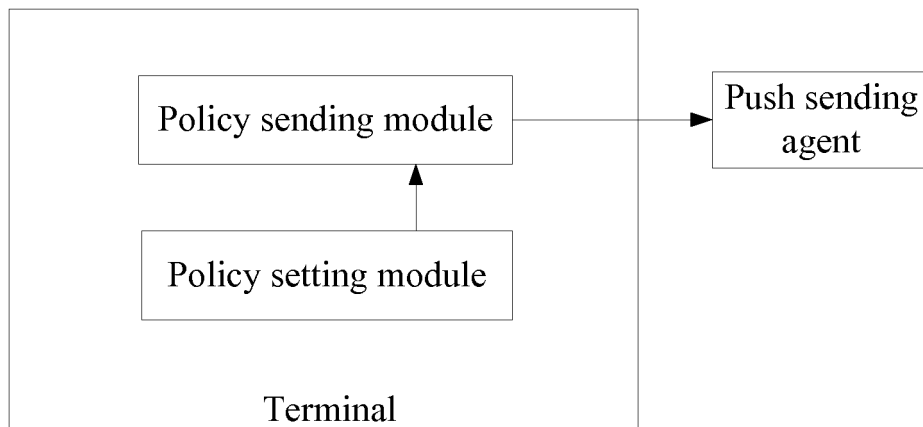


FIG. 7

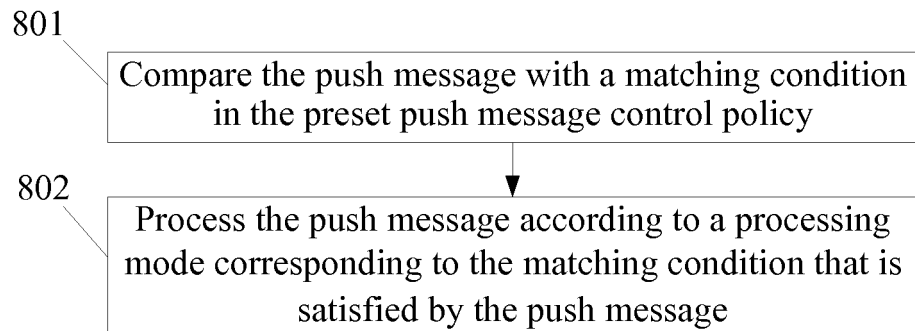


FIG. 8

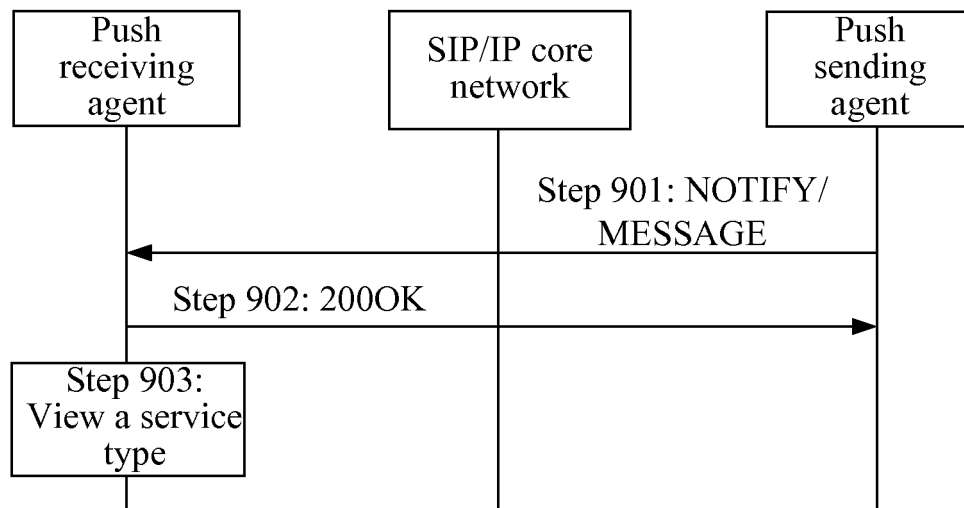


FIG. 9

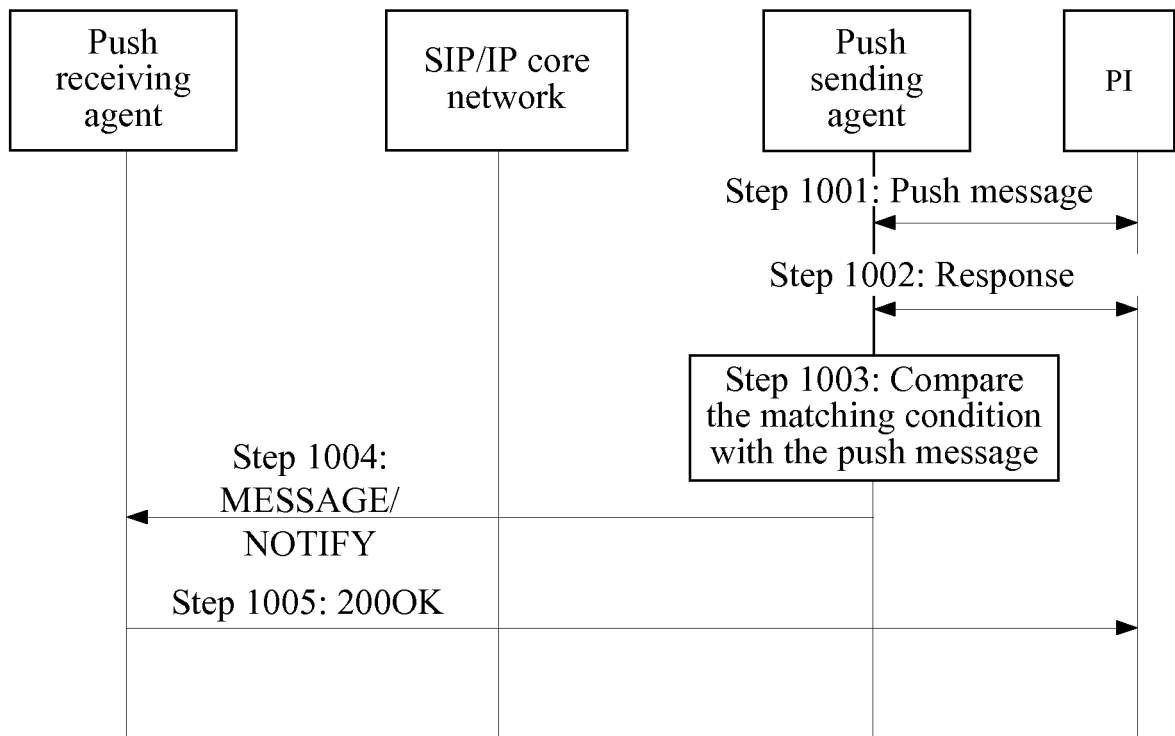


FIG. 10

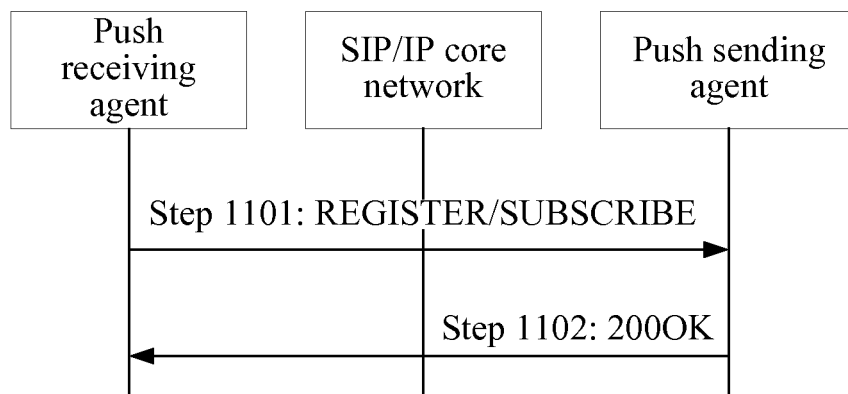


FIG. 11

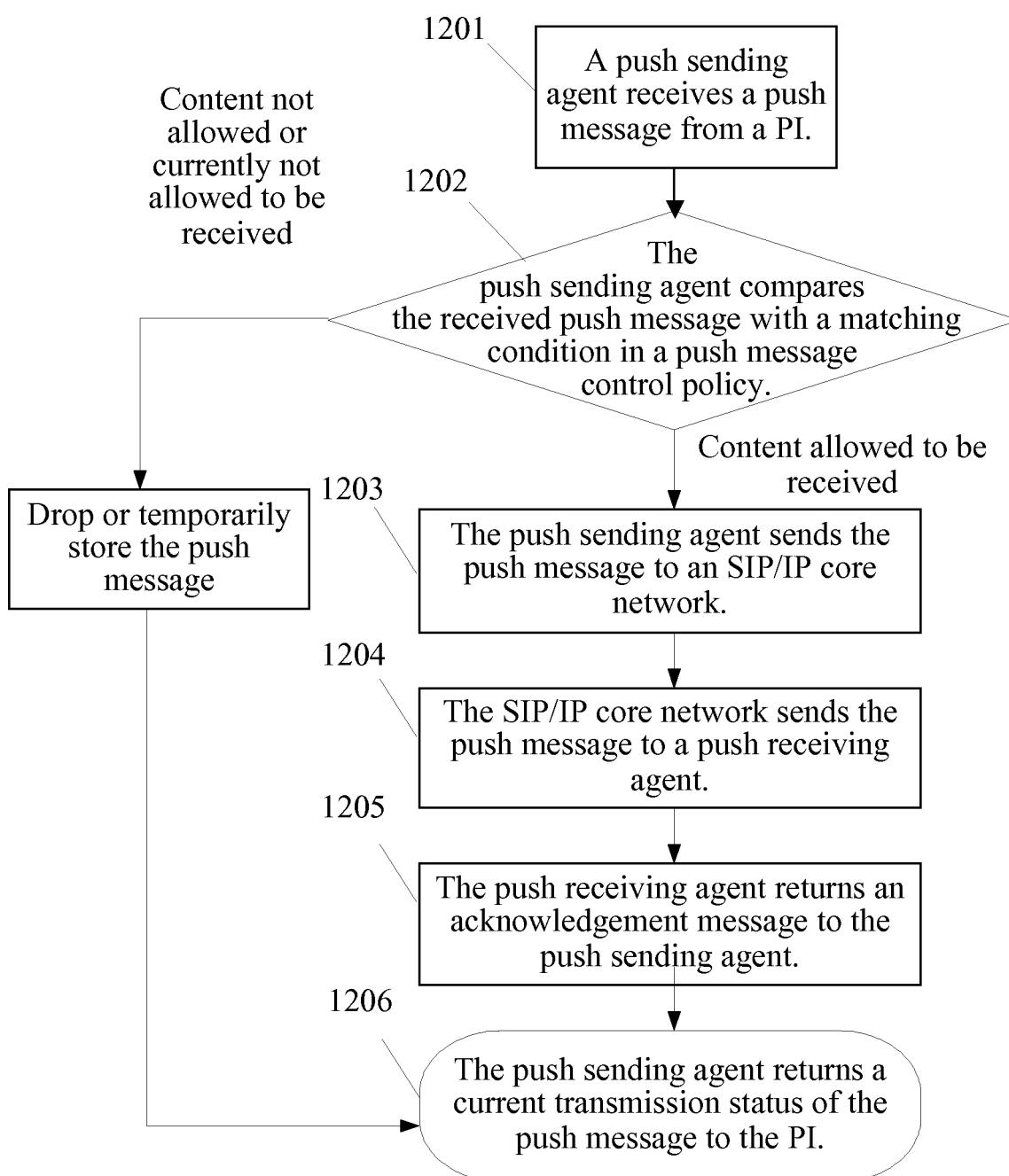


FIG. 12

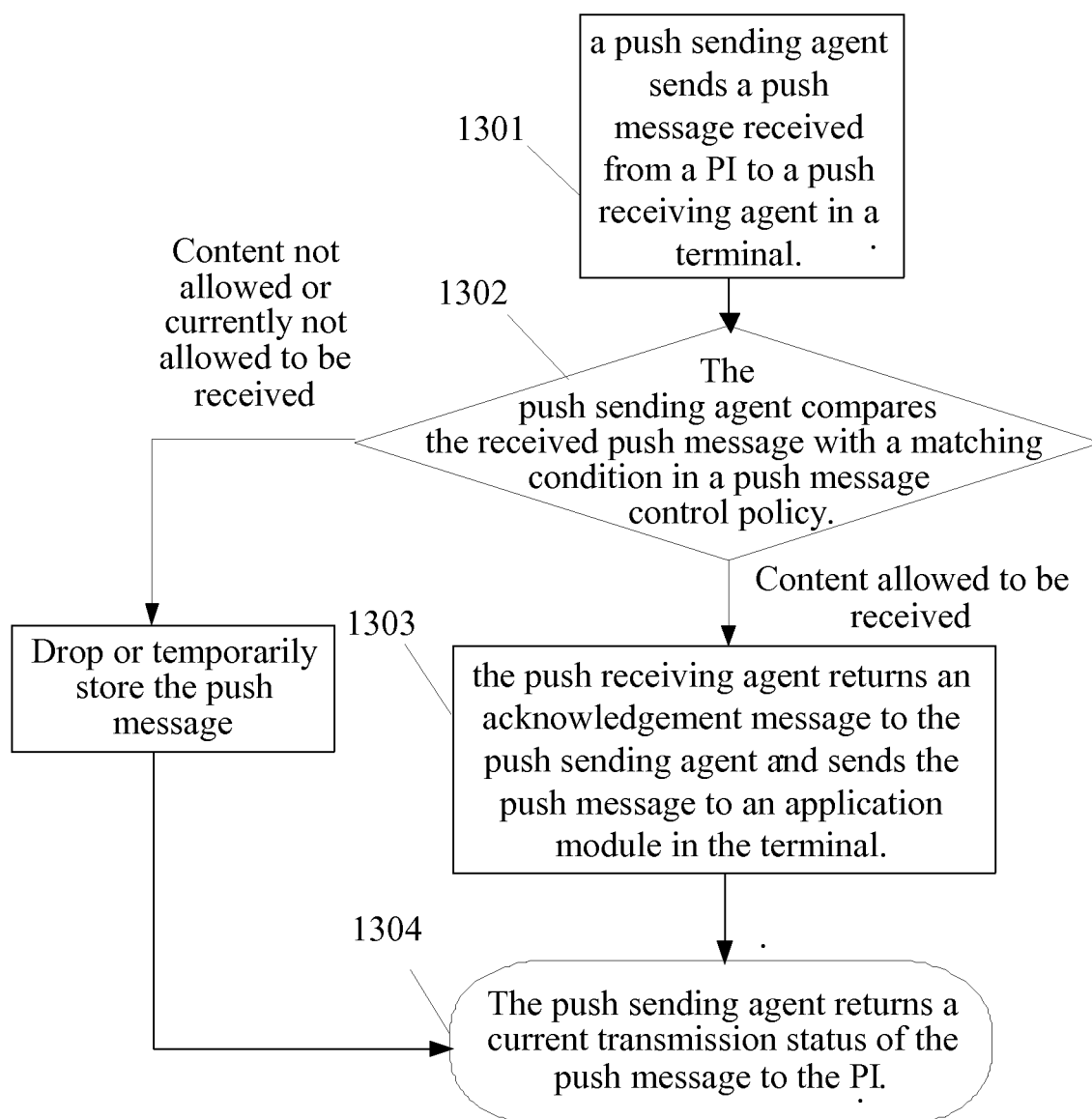


FIG. 13

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2008/072393

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CPRS, CNKI: WPI, EPODOC, PAJ: push, match+, compar+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN1529966A(NOKIA CORP) 15 Sep. 2004(15.09.2004) the description page 4 line 1-page 16 line 12, figures 1-9	1,2,4,7,10-13,16,19, 23-25
X	US6311058B1(MICROSOFT CORP) 30 Oct. 2001(30.10.2001) the description column 2 line 54-column 14 line 51, figures 1-8	1,2,4,7,10-13,16,19, 23-25
X	CN1874233A(TENGXUN TECH SHENZHEN CO LTD) 06 Dec. 2006(06.12.2006) the description page 4 line 18-page 9 line 3, figure 5	22
A		1-21,23-25

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
12 Dec. 2008(12.12.2008)Date of mailing of the international search report
25 Dec. 2008 (25.12.2008)Name and mailing address of the ISA/CN
The State Intellectual Property Office, the P.R.China
6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China
100088
Facsimile No. 86-10-62019451Authorized officer
YU,wenqing
Telephone No. (86-10)62411450

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2008/072393

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN101079710A(TENGXUN TECH SHENZHEN CO LTD) 28 Nov. 2007(28.11.2007), the whole document	1,2,4,7,10-13,16,19, 23-25
PX	CN101136837A(HUAWEI TECHNOLOGY CO LTD) 05 Mar. 2008(05.03.2008), the whole document	1-25

Form PCT/ISA/210 (continuation of second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2008/072393

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Claim 1 directs to a method for controlling push message, claim 22 directs to a terminal. These claims are not linked by common or corresponding special technical features, thus do not form a single general inventive concept. The application, hence does not meet the requirements of invention as defined in Rules 13.1 and 13.2 PCT.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/CN2008/072393

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN1529966A	15.09.2004	WO02069585A2	06.09.2002
		US2002160805A1	31.10.2002
		EP1364497A2	26.11.2003
		US6778834B2	17.08.2004
		US2004219882A1	04.11.2004
		US2004237109A1	25.11.2004
		US7295862B2	13.11.2007
		US7308269B2	11.12.2007
		CN100336371C	05.09.2007
US6311058B1	30.10.2001	EP1060597A2	20.12.2000
		WO9935778A2	15.07.1999
		JP2003526226T	02.09.2003
		EP1060597B1	25.06.2008
		WO9935802A2	15.07.1999
		DE69938960E	08.08.2008
		EP1968278A2	10.09.2008
CN1874233A	06.12.2006	CN100385854C	30.04.2008
CN101079710A	28.11.2007	WO2008071108A1	19.06.2008
CN101136837A	05.03.2008	none	

Form PCT/ISA/210 (patent family annex) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2008/072393

CLASSIFICATION OF SUBJECT MATTER

H04L12/54 (2006.01) i

H04L12/18 (2006.01) i

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 200710154667 [0001]